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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,242	09/15/2003	Gururaj M. Katti	Intel-005PUS	2391

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Daly, Crowley & Mofford, LLP
c/o PortfolioIP
P.O. Box 52050
Minneapolis, MN 55402

EXAMINER

WILSER, MICHAEL P

ART UNIT	PAPER NUMBER
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2195

MAIL DATE	DELIVERY MODE
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07/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/662,242

Applicant(s)

KATTI ET AL.

Examiner

Michael Wilser

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on September 15, 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-25 are pending and have been considered below.

Drawings

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Figures 1, 3-8, and 13 are hand drawn or hand written and hard to interpret. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 124 and 126 on page 2 of the amendment line 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following claim language is unclear and indefinite:

(i) As per Claims 1, 16, 20, and 23 line 4, it recites "turns". It is unclear as to how the threads take "turns". It is uncertain if the thread waits for the previous to finish or interrupts the current thread or waits for an event.

(ii) In addition, Claims 1, 16, 20, and 23 line 7 it recites "avoid occurrence of idle time". It is unclear how the threads "avoid" idle time. It is uncertain if the thread waits for a signal to wake it up or does other tasks while waiting.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 5-11, 13, and 16-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Balakrishnan (US 2004/0246980).

8. As per Claim 1; Balakrishnan teaches a method comprising:

- a. configuring processors with multiple threads of execution to execute a critical section in turns (page 2, paragraph 24); and
- b. controlling the threads of execution of the processor to avoid occurrence of idle time (page 2, paragraph 22).

9. As per Claim 2; Balakrishnan discloses a method as in Claim 1 above, and further discloses that the threads of execution of the processors execute in order via inter-thread signaling (page 3, paragraph 36).

10. As per Claim 3; Balakrishnan discloses a method as in Claim 2 above, and further discloses

a. enabling each thread to execute an instruction to cause inter-thread signal to a next thread to be generated (page 3, paragraph 38 and page 4, paragraph 45); and

b. enabling the thread to execute a second instruction which causes the thread to wait for an inter-thread signal from a previous thread (page 2, paragraph 23 and page 4, paragraph 49).

11. As per Claim 5; Balakrishnan discloses a method as in Claim 3 above, and further discloses that the processors comprise a register through which inter-thread signals are given to the next thread (page 2, paragraph 21).

12. As per Claim 6; Balakrishnan discloses a method as in Claim 5 above, and further discloses that the processors comprise registers through which inter-thread, inter-processor signaling can occur (page 2, paragraph 21).

13. As per Claim 7; Balakrishnan discloses a method as in Claim 6 above, and further discloses that the processors use external registers to enable inter-thread, inter processor signaling to occur (page 2, paragraph 21).

Art Unit: 2195

14. As per Claim 8; Balakrishnan discloses a method as in Claim 2 above, and further discloses of relinquishing control of the critical section as soon as the critical section has been executed (page 4, paragraph 53).

15. As per Claim 10; Balakrishnan discloses a method as in Claim 1 above, and further discloses that the processors are capable of executing at least two critical sections of code (page 3, paragraph 40).

16. As per Claim 11; Balakrishnan discloses a method as in Claim 10 above, and further discloses that the processors comprise a functional pipeline in a network processor (page 2, paragraph 20).

17. As per Claim 13; Balakrishnan discloses a method as in Claim 1 above, and further discloses that the processors comprise a functional pipeline and one or more critical sections of code are executed in the functional pipeline (page 2, paragraph 20).

18. As Per Claims 16, 20, and 23; they were rejected for the same reason as Claim 1 above.

19. As per Claim 17; it was rejected for the same reason as Claim 2 above.

Art Unit: 2195

20. As per Claims 18, 21, and 24; they were rejected for the same reason as Claim 3 above.

21. As Per Claims 9, 19, 22, and 25; they were rejected for the same reason as Claim 8 above.

Response to Arguments

22. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

23. Claims 4, 12, and 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. The following is a statement of reasons for the indication of allowable subject matter:

(i) As per Claim 4; the prior art does not teach or render obvious the use of a write latency of three instruction cycles when processing a thread in the critical section.

(ii) As Per Claim 12; the prior art does not teach or render obvious the critical section of code comprising a metering micorblock or a congestion avoidance microblock.

(iii) As per Claim 14; the prior art does not teach or render obvious the critical section of code comprises an ATM receive processing microblock.

(iv) As per Claim 15; the prior art does not teach or render obvious one or more critical sections comprising an ATM traffic management processing microblock.

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Wilkinson, III et al. (US 2003/0135351) Functional pipelines.
- b. Madajczak (US 2005/0047439) System to process packets according to an assigned sequence number.
- c. Wilkinson, III et al. (US 2005/0216710) Parallel processor with functional pipeline providing programming engines by supporting multiple contexts and critical section.

Art Unit: 2195

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Wilser whose telephone number is (571) 270-1689. The examiner can normally be reached on Mon-Fri 7:30-5:00 EST (Alt Fridays Off).

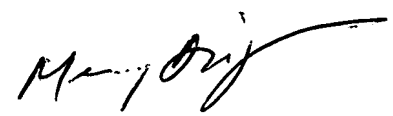
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MPW

July 23, 2007



MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100